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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,108	06/30/2003	Hirotake Ando	03560.003330	1047
5514 7590 04/18/2007 FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			EXAMINER PHAM, VAN T	
			ART UNIT	PAPER NUMBER
			2627	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/18/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/608,108

Applicant(s)

ANDO, HIROTAKE

Examiner

VAN T. PHAM

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-29, 32-39 and 41-43 is/are rejected.
- 7) ☒ Claim(s) 30, 31 and 40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/22/2007 has been entered.

Claim Objections

2. Claims 30 and 39 are objected to because of the following informalities: the “ $\frac{a}{b}$ ” in line 5, should be changed to -- = --.

3. There are two claims 33. All claims 33-43 should be renumbered as 34-44, respectively.

4. Claim 43 recites “an apparatus according to claim 22, wherein said circuit configured to adjust the servo-loop gain of **focus** servo control adjusts the servo-loop gain of **focus** servo control in accordance with the change of the disk rotation frequency so that the servo-loop gain in an outer portion of the optical disk is higher than that in an inner portion of the optical disk”, which should depend on claim 33, instead of claim 22.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 39 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

There is inadequate disclosure of how to come up with this equation " **$G_{curr} = G_{max} * \sqrt{(W_{curr}/W_{max})}$** " the invention of claim 39. Instead, in the specification [0056], discloses "when the zone having the highest rotation frequency is represented by zone 0, and the band and the rotation frequency at that time are represented by F_{zo} and W_o , respectively, the band F_{zo} at zone N is expressed by: $F_{zn} = F_{zo} * \sqrt{W_n/W_o}$." Therefore, the above equation is expressed for the **control band (F)** not the **gain (G)** as recites in claim 39. Hence there would be undue experimentation for one of skill in the art to make and use the invention.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 22-29, 32- 39, 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (US 5,432,766) in view of Applicant admitted prior art (AAPA).

Regarding claim 22, Ando discloses an optical information reproducing apparatus for recording or reproducing information on/from an optical disk using an optical spot, and which controls rotation of the optical disk so as to provide a constant linear velocity by changing a

rotation frequency in accordance with a radial-direction position of the optical spot, said apparatus comprising:

- a circuit configured to controls rotation of the optical disk by changing a rotation frequency thereof (see Figs. 1, 4-5 and abstract);

- a servo control circuit for the optical spot (see Figs. 1, 18 and col. 3); and

- a circuit configured to adjusts a servo-loop gain of tracking servo control in accordance with the change of the rotation frequency (see Figs. 1-5 and cols. 1-2, 6-7).

AAPA discloses an optical information reproducing apparatus for recording or reproducing information on/from an optical disk using an optical spot, and which controls rotation of the optical disk so as to provide a constant linear velocity by changing a rotation frequency in accordance with a radial-direction position of the optical spot, comprising: a focus servo control circuit and a tracking servo control circuit for the optical spot (see Fig. 6).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a circuit control a focus servo control circuit and a tracking servo control circuit for the optical spot in Ando as suggested by the admitted art (noted that Ando does disclose a loop gain of a servo circuit but not as clearly as the as admitted art), the motivation being in order to perform control within a control error range desired for recording and reproducing operations (see AAPA [0011]).

Regarding claim 23, the combination of Ando and AAPA, discloses an apparatus according to claim 22, wherein said circuit configured to adjust the servo-loop gain of tracking servo control adjusts the servo-loop gain in accordance with a stationary rotation frequency at the radial-direction position of the optical spot (see Ando Fig. 5 and cols. 1, 4, 6-7).

Regarding claim 24, the combination of Ando and AAPA, discloses an apparatus according to claim 22, wherein the optical disk is divided into a plurality of zones in a radial direction, wherein said rotation control circuit controls rotation of the optical disk so that a linear velocity is substantially constant between respective zones by changing the rotation frequency for each zone, and wherein said circuit configured to adjusts the servo-loop gain of tracking servo control adjusts the servo-loop gain in accordance with a stationary rotation frequency of each zone (see Ando Figs. 3-5 and AAPA).

Regarding claim 25, the combination of Ando and AAPA, discloses an apparatus according to claim 22, wherein said circuit configured to adjusts the servo-loop gain of tracking servo control adjusts the servo-loop gain by setting a gain proportional to eccentric acceleration corresponding to the change of the rotation frequency (see Ando, and see AAPA Figs. 6-8, [0012]).

Regarding claim 26, the combination of Ando and AAPA, discloses an apparatus according to claim 22, wherein said tracking servo control circuit is controlled by a sampling frequency that changes in accordance with the change of the rotation frequency, and wherein said circuit configured to adjust the servo-loop gain of tracking servo control performs gain adjusting in accordance with the change of the rotation frequency in a state in which a coefficient of a phase compensation filter included in said tracking servo control circuit is fixed (see AAPA Figs. 6-8, [0005], [0011] and see Ando cols. 4-5).

Regarding claim 27, the combination of Ando and AAPA, discloses an apparatus according to claim 22, wherein the optical disk is a sample servo disk having a servo region provided radially from the center of the optical disk, and wherein said circuit configured to adjust

the servo-loop gain of the tracking servo control performs gain adjustment with the change of the rotation frequency in a state in which a coefficient of a phase compensation filter included in said tracking servo control circuit is fixed (see rejection above of claim 26).

Regarding claim 28, the combination of Ando and AAPA, discloses an apparatus according to claim 22, wherein said tracking servo control circuit is controlled with a constant sampling period in the entire region of the optical disk, and wherein said circuit configured to adjust the servo-loop gain of the tracking servo control adjusts the servo-loop gain by adjusting a coefficient of a phase compensation filter included in said tracking servo control circuit and a gain in accordance with the change of the change of the rotation frequency (see AAPA Figs. 6-8 and [0005], [0019], Ando cols. 4-5).

Regarding claim 29, the combination of Ando and AAPA, discloses an apparatus according to claim 22, wherein a recording of the optical disk is divided into a plurality of zones, wherein said rotation control circuit controls rotation of the optical disk so that a linear velocity is substantially constant between respective zones by changing the rotation frequency for each zone, each having a rotation frequency within a predetermined rotation-frequency range a block, and wherein said circuit configured to adjusts the servo-loop gain of tracking servo control adjusts the servo-loop gain of the tracking servo control adjusts the servo-loop gain for each block (see rejection above of claim 24, inherently).

Regarding claim 32, the combination of Ando and AAPA, discloses an apparatus according to claim 22, wherein said circuit configured to adjust the servo-loop gain of tracking servo control adjusts the servo-loop gain of tracking servo control in accordance with the change

of the disk rotation frequency so that the servo-loop gain in an outer portion of the optical disk is higher than that in an inner portion of the optical disk (see Ando Fig. 4 and cols. 4-5).

Regarding claim 42, the combination of Ando and AAPA, discloses an apparatus according to Claim 22, wherein said circuit configured to adjust the servo-loop gain of tracking servo control adjusts the servo-loop gain in accordance with a transient change of the rotation frequency caused by movement of the optical spot in a radial direction (inherently).

Regarding claims 33-38, 41, 43, see rejection above of claims 22-26, 28-29, 42, 32, respectively.

Allowable Subject Matter

9. Claims 30-31, 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 30 is allowable over prior art of record since it does not disclose or suggest all of the limitations of claims 9 or 19 as well as the limitation that tracking control circuit adjusts the servo-loop gain so that when a servo gain at a highest rotation frequency W_{max} is represented by G_{max} , and a rotation frequency is represented by W_{curr} , a servo gain G_{curr} satisfies the following relationship: $G_{curr} = G_{max} \cdot W_{curr} / W_{max}$.

Claims 31 and 40 are allowable over prior art of record since it does not disclose or suggest all of the limitations of claims 22 and 33, respectively, as well as the limitation that said focusing servo control circuit comprises a circuit configured to adjust the servo-loop gain of focusing servo control, and wherein when said circuit configured to adjust the servo-loop gain of tracking servo control changes the servo-loop gain of the tracking servo control with a

predetermined ratio, said circuit configured to adjust the servo-loop gain of focusing servo control changes the servo-loop gain of focusing servo control with a ratio proportional to the root of the predetermined ratio.

Cited References

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The cited references relate to focus position adjustment device and optical disc drive apparatus.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAN T. PHAM whose telephone number is 571-272-7590. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VP



WAYNE YOUNG
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